

accuracy of every doctrine advanced by the author, nor the chain of reasoning by which he attempts its support, we are, nevertheless, convinced that his prelections, from the amount of truth set forth in them, and the *vitality* by which they are pervaded, if they do not actually convey sound views on everything that relates to the philosophy of medicine, cannot fail to lead, at least, to a correct basis for the establishment of such views. The strong conservative predilections of Dr. Prince, which induce him to subject every new observation and theory in medicine to the severest scrutiny, and to refuse its admission until positively established, can have no other than a favourable influence upon his readers, by teaching them to be *progressive only in the road of positive truth.*

D. F. C.

ART. XXIV.—*Puerperal Fever; its Causes and Modes of Propagation.* Read before the New York Academy of Medicine, at the opening of the Discussion on Puerperal Fever, on the 4th of April, 1857; and published by consent of that body. By Joseph M. Smith, M. D., Professor of Materia Medica and Clinical Medicine in the New York College of Physicians, etc. 8vo. pp. 29. From the New York Journal of Medicine, for September 1, 1857.

Remarks on Puerperal Fever, before the New York Academy of Medicine, October 7, 1857. By B. Foote Barker, M. D., Professor of Obstetrics and Diseases of Women and Children, in the New York Medical College, etc. etc. 8vo. pp. 23. From the American Medical Monthly for November, 1857.

The etiology and general pathology of puerperal fever are subjects that press themselves with no little force upon the attention of every practitioner of medicine in this country. The disease is one of frequent occurrence; generally, as an epidemic, confined within comparatively narrow limits. It is always very rapid in its course, and, even in its mildest form, difficult to manage, while it often assumes a type of the utmost malignancy, destroying, with a frightful certainty and speed, the life of those in whom it is developed. Under all circumstances, puerperal fever must be ranked among the most formidable of the maladies which the physician is liable at any moment to be called upon to treat. In consequence of this, added to the very great discrepancy of opinion as to the true character and proper treatment of the disease prevailing among those who have undertaken its investigation, the young practitioner always comes to its treatment under circumstances the most painful and disadvantageous; doubtful as to its true nature, and uncertain as to the course of treatment it is his duty to pursue to arrest its fatal course.

The diversity of views that exists in respect to the pathology of puerperal fever can scarcely be ascribed to any actual obscurity or startling irregularity in its phenomena, or to any confusion or want of significance in its morbid anatomy, as revealed by the dissections of different observers. They have arisen rather, we apprehend, from an error in the logic of many of those who have furnished us with accounts of the disease, that has led them to form erroneous conclusions from unquestionable facts, but facts misinterpreted, or entirely detached from their legitimate relationship with other facts of equal prominence, and which exist in intimate connection with those adduced as constituting the true indices of the nature of the disease, and modifying essentially their pathological import and tendency.

Inflammation of the peritoneum, of the uterus, of the uterine veins, of the ovaries, or of several or all of these parts, being detected in almost every case of puerperal fever, it has been concluded, therefore, with great positiveness, that the disease was nothing more nor less than simply a local inflammation of the peritoneum, the uterus, or its appendages—a peritonitis, metritis, phlebitis, or ovaritis; that the local lesions are the primary effects of the cause that gives rise to puerperal fever, and that all the phenomena which characterize it are the direct result of the local lesions; no inquiry being instituted to ascertain whether, 1st, the lesions discovered in the abdominal serous membrane, and in

certain or all of the pelvic viscera of the female, are the only ones that ordinarily occur in cases of puerperal fever. 2d. Whether the indications of local disease that are usually met with are in truth the primary results of the action upon the organs of the producing cause of the disease, whatever this may be; or, 3d. Whether they are not, rather, secondary results, depending on a prior diseased condition of the blood.

"The more," as has been correctly remarked by W. Tyler Smith, "puerperal fever is investigated, and tracked, as it were, to its elements or origin, the less satisfactory does any partial or local explanation of its nature become. In the progress of such examination, it appears more and more evident that there is a puerperal poison to which the lying-in woman is liable, and which produces (by its morbid action on the blood) all the varied phenomena of puerperal fever met with in different epidemics, localities, seasons, and constitutions. In one time or person, peritonitis is produced; in another, micturitis; in another, phlebitis; in another, mammary or other abscesses; in another, low fever; in another, intestinal irritation; in another, dissolution of the blood, without a trace of local inflammatory disorder; and so on throughout the list of local or special disorders which have been described by authors in puerperal fever. It may be questioned, even if phlebitis ever occurs without a poisoned condition of the blood, produced either as the result of contagion, epidemic influence, or the absorption of putrid matter from the uterus."

Scarcely any heed has been given to draw a correct and accurate diagnosis between puerperal fever, properly so called, and cases of open, acute, uncomplicated peritonitis or micturitis occurring during gestation or in the puerperal state. That the local phlegmasiae just referred to do occasionally occur in the pregnant, but more frequently in the newly delivered, female is most certain; it is likewise certain that they have been, under such circumstances, almost invariably confounded with puerperal fever, adding to the confusion with which the pathology of the latter has been environed, and the uncertainty that has marked everything relative to its treatment. And yet the attentive observer will very readily discover an essential difference between the general pathological character of the simple phlegmasiae of the abdominal and pelvic viscera as they present themselves during pregnancy and after parturition, as well as between their respective pathognomonia criteria; as much so, at least, as there is between the bronchial, pneumonie, and intestinal inflammations so common in the typhoid form of fever, and the simple acute form of bronchitis, pneumonie, or enteritis, occurring as a primary uncomplicated disease.

Another cause of the obscurity and contradiction which mark the commonly received opinions in respect to the pathology of puerperal fever is the assumption that it is an affection *sui generis*, nothing corresponding to it being ever met with in non-puerperal females or in the male subject. Had the so-called child-bed fever been carefully compared with certain febrile diseases occurring alike in individuals of both sexes, of nearly all ages, and under almost every circumstance and condition in which they may be placed, more correct views in relation to its nature would long ago this have been reached, and a more rational and successful plan of treatment and of prophylaxis discovered and confirmed.

That puerperal fever is not simply a peritonitis, micturitis, or metro-phlebitis, is proved by the fact that the lesions met with after death are not only those of peritoneal, uterine, or venous inflammation, but, most generally, of all these combined, in connection, usually, with indications of a diseased condition, to a greater or less extent, of many of the other organs and tissues of the body, and invariably of the blood. The morbid anatomy of the disease thus very clearly indicates, that so far from the symptoms which characterize it being the result of a local inflammatory affection of the womb itself, or of its appendages or peritoneal coat, the local lesions that are present in any case are but part of a disease which, like continued fever, involves the entire organism, and which is the result of a contamination of the blood, as Dr. Ferguson has long ago clearly established; the contamination originating, it may be, in some cases, from causes existing within the patient's own body, but most generally from a contagion, infection, or poison coming from without.

Another fact in respect to puerperal fever has been most conclusively established, and that is its intimate relationship to constitutional erysipelas—erysipelatous fever. It has been shown by the histories furnished us of the epidemics of erysipelas which have prevailed in different parts of Europe and of this country, by physicians who had the best opportunities of studying them, that during such epidemics not only are a large proportion of recently delivered females liable to an attack of puerperal fever, but that unmarried and non-pregnant females are also liable to a disease having all the characteristic features of the fever reputed to be peculiar to the puerperal state, and exhibiting, in fatal cases, nearly all the lesions detected in the latter affection. Nay, further, that during these epidemics of erysipelas, males, also, are liable to the same inflammatory conditions of the serous and mucous tissues and of the veins, and to the same morbid state of the blood, that attend upon genuine puerperal fever. While, on the other hand, we have on record a number of well authenticated cases, which would seem to prove very conclusively that the contagion, infection, or poison, be it what it may, of puerperal fever is capable of producing erysipelas in both sexes. Thus, as Krämer has well remarked, we have ample evidence of the fact that so far as concerns their pathological constitutions and etiological relationship, puerperal fever and erysipelatous fever are identical; they differ only in certain non-essential phenomena.

The important bearing of the foregoing facts are beginning to attract the attention of the medical profession everywhere; and, while a few teachers, of unquestionable authority, still persist in viewing puerperal fever as simply an acute peritonitis or eade-metritis, or a metro-phlebitis with pyæmia, the major portion of our best educated practitioners are beginning to recognize the true pathological character of the disease, until, as a consequence, we find that its treatment has become more rational—or, at least, less exclusive—and, as we have reason to believe, more successful.

A very able and animated discussion on the subject of the disease in question—its etiology, pathology, prophylaxis, and treatment—took place in the early part of the past year, at the New York Academy of Medicine, and was continued at several of its sessions. The publications whose titles are prefixed to the present article are particularly interesting as setting forth the views advocated by two of the leading speakers on these occasions.

The first of them, by Dr. Joseph M. Smith, presents a very excellent and somewhat elaborate examination into the producing causes of puerperal fever. It will richly repay an attentive perusal. The views advanced in it are, in the main, sound, while the evidence adduced in their support is pertinent, and, as we believe, conclusive. Similar views, based upon the same class of facts, have for many years been advocated by us. Although the essay of Dr. Smith presents, confessedly, a very able outline of the true causes and mode of propagation of puerperal fever, it has by no means exhausted the subject. To the many of facts given by the author could be added, with very little research, a host of others, equally, if not more, striking and conclusive.

That our readers may know what are the views of Dr. Smith in reference to the nature of puerperal fever, we copy the following introductory sentences of the pamphlet before us:—

"In glancing over the literature of puerperal fever, it is seen that physicians have been divided in their views concerning the pathology of that disease; some holding the opinion that it is an idiopathic fever, *sui generis*; others regarding it as essentially a local inflammation, taking the form of poritonitis, metritis, metro-peritonitis, or uterine phlebitis. Of late, the former of these opinions, with the exception of so much of it as imputes to the disease a specific attribute, has received the support of numerous able contributors to obstetric pathology. In fact, so generally is this view of the disease entertained at present, that Professor Simpson remarks that the evidence on which it rests 'has induced, of late, most of our best pathologists to reject the idea that puerperal fever is an idiopathic fever, *sui generis*, or a disease originating in, or identical with, poritonitis, or any other local inflammation.' But, while it is generally admitted that puerperal fever is not a disease, *sui generis*, it is nevertheless

regarded as an *idiopathic* fever, assuming a peculiar malignant form, being one of a group of febrile affections which originate, for the most part, from similar local conditions, and which have for their primary and essential pathological element a poisoned state of the blood. The forms of disease associated with puerperal fever, and which mainly constitute the group of disorders referred to, are typhus, and its modification typhoid fever, erysipelas, and hospital gangrene. That these are energetic infections, and due to a common toxæmia, seems evident from the fact that they occur in situations in which a subtle poison, the *ochetic miasm* of Dr. Gregory, is generated and diffused in the air, and which, finding its way into and contaminating the blood, produces constitutional and local phenomena, varying in form and character, according to certain morbid predispositions of the system existing at the time of its reception into the circulating fluid."

The opinions of the author as to the etiology of the disease are thus summed up, in the conclusion of the essay:—

"In reviewing the facts which have been stated, it appears that puerperal fever sometimes arises from the noxious air generated from the foul discharges of puerperal women in crowded and ill-ventilated lying-in hospitals; sometimes from the absorption of putrescent matters lodged in the uterus and vagina after parturition; sometimes from the exhalations of patients labouring under typhus fever, erysipelas, and gangrenous diseases; and sometimes from the emanations from the human body dissected after death.

"It further appears, that the miasms of typhus, erysipelas, and puerperal fever are severally capable of producing any one, or all of these diseases; and that they may attach themselves to the persons or clothing of midwives and physicians, and thus be transported from their sources to the chambers of lying-in women. It is also observable, that the more ordinary form of disease, induced by the febrile effluvia in question, is typhus and its modification, typhoid fever, whilst puerperal fever and hospital erysipelas are but varieties of that disease, taking their forms from the peculiar predisposing conditions of the system, and certain epidemic influences.

"Finally, in contemplating the results of our inquiries, there are two things which cannot fail to be specially suggested and to make durable impressions on the mind. The first is, the importance of preserving in absolute purity the persons, clothing, and bedding of the inmates, and also the floors, furniture, and atmosphere of lying-in hospitals; and in case puerperal fever manifests itself, of adopting the most prompt and efficient means of extinguishing it—such as ablation, ventilation, fumigation, and, if necessary, dispersion of the patients. The second is, the imperative duty of physicians ever to bear in mind the danger of their becoming agents of disseminating the disease in epidemic puerperal fever seasons, and to observe every precaution against such accidents. If, indeed, there be any moral obligation resting on a medical man to his patients, paramount to every other, it is that of refraining from attending a female in labour, if there be the slightest chance of his conveying to her the germ of a mortal disease."

The remarks of Dr. Barker, as reported in the second pamphlet, bear more exclusively upon the pathology and treatment of puerperal fever. In reference to the first of these points, he observes that the disease is one which cannot be investigated by the study of a few sporadic cases, or of a single epidemic, or of different epidemics in the same locality.

"Neither is it a disease to be studied in the dead-house, for, valuable as are the researches which have been made into the minute anatomy of this affection, important as it is, for the complete elucidation of the subject, that everything should be known as to the autopsy lesions which are to be found; yet their variety in different epidemics, the absence of everything like constancy or uniformity in these autopsy lesions, the frequent want of everything like correspondence between the severity of the symptoms during life, and the amount of the morbid appearances found after death, prove, as I think, that these lesions should be regarded as results of the disease, but not as *the disease*. And it seems to me that there is some danger of our giving undue prominence to these autopsy lesions. We might as well seek to find out the cause of the fire, in a

minute chemical and microscopical examination of the ashes of a conflagration, as rely upon the appearances found after death, to determine the character of a disease which results from the absorption of a morbid poison. But, is this such a disease? That is the grand question, and it can be answered correctly, not by studying the disease from one stand-point alone, but by a comprehensive examination of all that has been found out as to its phenomena and laws, in different epidemics and varied localities, as recorded by different observers."

"In this day of progressive medicine, in our anxiety to bring it up to the perfection of a physical science, it is possible that in our search after what is new and original, we may overlook what is old and proven, and thus that erroneous deductions may be drawn from the limited experience and observation of a few, which would have been corrected, had advantage been taken of the enlarged experience of the many. We have greatly the advantage of our predecessors in studying this disease. With all the acumen and careful observation of Gordon, and Armstrong, and Collins, and Gooch, and Ferguson, they had but a limited knowledge of its pathology and therapeutics compared with what we have, who can bring together the aggregate results of all their labours, without assuming to place ourselves on the same level with them."

This is perfectly true; it is in consequence of the one-sided conclusions that have been drawn in relation to the nature and causes of puerperal fever, from imperfect, partial, and insufficient observations; from facts perfectly accurate in themselves, but the true import of which can be arrived at only by studying them in their relationship to other co-existent facts, the very presence of which may have been unsuspected; from facts badly interpreted, in consequence of the confounding of effects with causes—of secondary and remote, with primary and immediate phenomena; from taking a few isolated cases or a single epidemic visitation of the disease as indicative of its true type, that all the errors that exist in relation to the pathology and treatment of puerperal fever have originated.

The following are the reasons which Dr. Barker adduces in proof of the disease being of zymotic origin, and having an essentiality altogether distinct from inflammation of any tissue or structure of the body, even in the puerperal female.

"1. *Puerperal fever has no anatomical character.* That there are a great variety of structural lesions found, all will admit. The four principal lesions are, as Dr. Clark has said, those of the peritoneum, of the veins of the body of the uterus, of the lymphatics, of the inner surface of the uterus. And then we have lesions of the plera, of the lungs, and pus in the liver, in the muscles, in the joints, and pus in the blood. But where we have a group of symptoms so resembling each other that they are almost identical, we do not have constant or uniform structural lesion. They are inconstant in their seat and their amount. In the same epidemic we have the greatest possible variety in their seat and their amount. Lesions of the peritoneum may be present or absent, so of the uterus, so of the lymphatics, and so of the veins. In those cases which Osiander, Gooch, Looock, and Simpson suppose to be cases of puerperal fever without lesion, conceding the correctness of Prof. Clark's view, that with a proper examination pus might have been found in the veins of the uterus—that they really were cases of pyæmia, what does this prove? * * * Admit the fact, will any one claim that all cases of puerperal fever are cases of pyæmia, and that inflammation of the inner surface of the uterus, or of its veins, is an essential anatomical characteristic of puerperal fever?

"2. *These lesions are often not sufficient to influence the progress of the disease, or to explain the cause of death.* The most malignant form of the disease, that in which a fatal result occurs the most speedily, offers the fewest and the least striking structural lesions. The longer the disease continues, the more prominent and the more manifest are the organic lesions. Does not this prove that the lesions are consecutive or secondary—that there is a primitive source, an original cause of vital depression, which sometimes destroys life so rapidly that there is no time for the development of the secondary morbid alteration. The symptoms are not, then, the result of these lesions, but the result of some specific agent—some morbid poison, which subsequently develops the autopsy

lesions. Sometimes the morbid poison so overwhelms the system, that the patient dies in a few hours, without any reactional symptom. It is not in these cases we have the most marked structural lesions.

"3. We may have inflammation even to an intense degree, of any of the organs in a puerperal woman, in which the principal lesions of puerperal fever are found, and yet the disease will lack some of the essential characteristics of puerperal fever. I mean to say, we may have peritonitis, or phlebitis, or metritis, in the lying-in woman, and yet the disease will be quite distinct in its mode of attack, in its symptoms, in its morbid anatomy, and in its treatment from puerperal fever."

What Dr. B. asserts *moy occur*, we assert *does occur*. Simple acute inflammation of the peritoneum, or of the uterus or its veins, is not uncommon in the puerperal state; and has, we know, been confounded with true puerperal fever.

4. The next reason adduced by Dr. B. is the fact that *the lesions themselves, detected in puerperal fever, differ materially from those having their origin in simple inflammation.* This is very clearly shown in the contrast which Dr. Murphy has drawn between the two, and which is quoted at length by Dr. Barker.

5. Another argument presented in proof of the doctrine that puerperal fever is a zymotic disease and not a local phlegmasia, is, that *simple inflammation is not communicable from one patient to another, through the medium of a third party*, as is the case with the former, of which Dr. B. adduces the evidence.

6. A further argument, of similar bearing, is the fact that *the prophylaxis of puerperal fever will not answer as the prophylaxis of a simple local inflammatory disease.* In proof of this Dr. B. refers to what occurred in the General Hospital of Vienna, where the mortality from puerperal fever was reduced from one in every ten females delivered, as it stood between the years 1840 to 1846, to one in seventy-four—the ratio in 1848—by preventing the students from touching any diseased subject at the *post-mortem* examinations, and causing them to wash thoroughly their hands in a solution of chlorine before and after every vaginal examination, measures that would be perfectly futile as preventives of any simple inflammatory affection.

"It may be objected," says Dr. B., "that the views which have been advanced as to the pathology of puerperal fever, entirely ignore the existence of an epidemic influence, and that the epidemic influence may give a specific character to the local phlegmasia. From Sydenham we have learned the phrase 'type of the season,' and another phrase has come into use, meaning nearly the same thing, viz.: 'Epidemic constitution.' Now, what is meant by these terms? Clearly they must refer to certain atmospheric or telluric influences, which modify the susceptibility of the system to disease, or which increase the virulence of the poison which develops disease. That this influence really exists, acting in both ways, I think there can be no doubt. It sometimes produces its influence wholly on the system, diminishing the vital resistance to disease, and rendering inflammatory action asthenic in its type, or the opposite result may be produced. So, also, it may increase the virulence of the poison which gives rise to the zymotic diseases. Puerperal fever is most notably susceptible to an epidemic influence."

In respect to the treatment of puerperal fever, Dr. B. remarks that it has not been his lot to witness any epidemic of the disease in which bloodletting was admissible, yet he believes that such may occur. In sporadic cases, he considers it as undoubtedly much more frequently indicated.

It seems to him that the principle which should govern our practice in this disease, should be the same as would govern our practice in any other disease. Venesection should never be resorted to simply because the case is one of puerperal fever, but because the symptoms indicate that depletion is necessary. He holds that it is equally absurd to insist upon it as the cardinal remedy, as to denounce it as never applicable in the management of this disease.

"The same general principles should govern us in resorting to purgatives, emetics, diuretics, &c. * * * They are neither to be excluded wholly, nor to be relied upon entirely, in the treatment. They may be indicated in certain cases, but they are only to be resorted to when there are special indications for their use."

An important indication in the treatment of the disease is to control vascular excitement and nervous irritation. As an arterial sedative well adapted to reduce the excitement of the vascular system, inasmuch as it does not depress the vital powers, Dr. B. recommends the *veratrum viride*. To allay nervous irritation he is in favour of large and repeated doses of opium. "It is astonishing to see," he remarks, "to what extent patients will tolerate opium, where the peritoneal lesion predominates. When opium is acting beneficially in such cases, there will be no reduction of the frequency of respiration and also of the frequency of the pulse. If the opium is pushed to the point of incipient narcotism, and the respiration grows slower and slower, without a corresponding decrease in the pulse, the remedy is not acting beneficially, and should be at once abandoned."

To combat the local secondary lesions which may be developed, Dr. B. suggests local depletion, counter-irritation, fomentations to the abdomen, turpentine ointmentically, opium to subdue pain, and chlorinated injections.

In those cases in which the system seems to be overwhelmed, it is probable that life may be preserved by the heroic use of stimulants and appropriate antiriment. Dr. B. believes that many are lost to die from the neglect of these resources. It seems to him that after a patient with puerperal fever has lived for forty-eight hours, there is constant encouragement for effort, and that the danger is, in a certain sense, diminished in proportion to the duration of the disease.

D. F. C.

ART. XXV.—*Reports of American Institutions for the Insane.*

1. *Of the Eastern Lunatic Asylum of Kentucky, for 1856-57.*
2. *Of the Tennessee Hospital for the Insane, for 1856-57.*
3. *Of the State Lunatic Hospital of Pennsylvania, for 1857.*
4. *Of the Pennsylvania Hospital for the Insane, for 1857.*
5. *Of the Mount Hope Institution, for 1857.*
6. *Of the Butler Hospital, for 1857.*
7. *Of the McLean Asylum, for 1857.*
8. *Of the Massachusetts State Lunatic Hospital, at Worcester, for 1857.*
9. *Of the Maine Insane Hospital, for 1857.*

1. The termination of the fiscal year of the Eastern Lunatic Asylum of Kentucky having been changed, the last report instead of including the usual period of two years, is restricted to one year and nine months, ending with the close of September, 1857.

	Men.	Women.	Total.
Patients in the Asylum, Jan. 1, 1856	104	82	186
Admitted in 1 year and 9 months	108	66	174
Whole number	212	148	360
Discharged, including deaths	83	49	132
Remaining, September 30, 1857	129	99	228
Of those discharged, there were enred	47	18	65
Died	22	23	45
Whole number since the Asylum was opened	1,530	757	2,287
Discharged, recovered			840
Died			897

Causes of death the last year and nine months.—Malaria exhaustion, 10; epilepsy, 9; consumption, 5; dysentery, 4; miasma, 3; hemorrhagic exhaustion, 3; old age, 2; *paralysie générale*, 2; frost-bite, 2; apoplexy, 1; fever, 1; ossification of heart, 1; bed-sores, 1; chorea, 1.

"Diarrhoea," says Dr. Chipley, "has been the prevailing malady in this institution for many years. In April, 1856, it was observed to be more than ordinarily prevalent, and early in May it assumed the form of an epidemic."